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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/623,068

07/18/2003

Hans-Jorg Timme

Z&PINFN10356

2691

24131

7590

01/06/2005

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EXAMINER

LEBENTRITT, MICHAEL

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,068

Applicant(s)

TIMME ET AL.

Examiner

Michael S. Lebentritt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/15/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/15/04 7/18/03

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: east search.

DETAILED ACTION

Election/Restrictions

Applicant's election of group II, (claims 22-34) in the reply filed on October 15, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group I, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 15, 2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 22-24, and 29-31 rejected under 35 U.S.C. 102(e) as being anticipated by Funada et al, US Patent 6,078,299.

Funada discloses a filter device comprising: a carrier substrate (31); at least one filter (14) carried by said carrier substrate; and a capping substrate (12); said carrier substrate (31) and said capping substrate (12) defining at least one cavity (17) therebetween containing said at least one filter; wherein said at least one filter is an acoustic wave filter; a surface Acoustic Wave Filter. Funada further teaches wherein said carrier substrate includes an integrated circuit (15); at least one contact pad (15) for coupling said at least one filter to a wiring substrate through at least one bonding wire. Further at least one interconnection (15,16) for coupling said at least one filter to a wiring substrate using flip chip technology. Wherein said at least one interconnection is a solder or metal bump (16). Please see figures 1-9 and discussion on column 4, line 10 to column 8, line 10

Claims 22-24, and 29 rejected under 35 U.S.C. 102(e) as being anticipated by Wright, US Patent 6,445,265.

Wright discloses a filter device comprising: a carrier substrate (482); at least one filter (482) carried by said carrier substrate; and a capping substrate (481); said carrier substrate (482) and said capping substrate (481) defining at least one cavity (not labeled) therebetween containing said at least one filter; wherein said at least one filter is an acoustic wave filter; a surface Acoustic Wave Filter. Wright further teaches wherein said carrier substrate includes an integrated circuit (25); at least one contact pad (781) for coupling said at least one filter to a wiring substrate through at least one bonding wire. Please see figures 5a-9 and discussion on column 3, line 35 to column 7, line 15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funada as applied to claim 22-24 and 29-31 above, and further in view of Tanski, US 4,409,570.

Funada is applied supra but lacks the anticipation of wherein said at least one filter is a Bulk Acoustic Wave Filter including at least one Bulk Acoustic Wave Resonator and wherein said at least one filter is a Sacked Crystal Filter. Tanski

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discloses wherein said filter is Bulk Acoustic wave filter (12) including at least one Bulk Acoustic Wave resonator (21). See figures 1 and 2 and discussion on column 2., line 60 to column 3, line 60. Examiner takes official notice that it is well known in the art to form a filter that is a Stacked Crystal Filter. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time of invention to form said at least one filter as a Bulk Acoustic Wave filter including at least one Bulk Acoustic Wave resonator or a stacked Acoustic wave Filter as taught by Tanski, because the filters separate the surface acoustic waves.

. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claim 22-24 and 29 above, and further in view of Tanski, US 4,409,570.

Wright is applied supra but lacks the anticipation of wherein said at least one filter is a Bulk Acoustic Wave Filter including at least one Bulk Acoustic Wave Resonator and wherein said at least one filter is a Sacked Crystal Filter. Tanski discloses wherein said filter is Bulk Acoustic wave filter (12) including at least one Bulk Acoustic Wave resonator (21). See figures 1 and 2 and discussion on column 2, line 60 to column 3, line 60. Examiner takes official notice that it is well known in the art to form a filter that is a Stacked Crystal Filter. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time of invention to form said at least one filter as a Bulk Acoustic Wave filter including at least one Bulk Acoustic Wave resonator

or a stacked Acoustic wave Filter as taught by Tanski, because the filters separate the surface acoustic waves.

. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claim 22-24 and 29 above, and further in view of Funada et al, US Patent 6,078,299.

Wright is applied supra but lacks the anticipation of wherein at least one interconnection for coupling said at least one filter to a wiring substrate using flip chip technology. Wherein said at least one interconnection is a solder or metal bump. Funada discloses wherein at least one interconnection (15,16) for coupling said at least one filter to a wiring substrate using flip chip technology. Wherein said at least one interconnection is a solder or metal bump (16). See figure 6a and discussion on column 5, lines 10-15. In view of this disclosure it would have been obvious to one of ordinary skill in the art at the time of invention to form said at least one interconnection for coupling said at least one filter to a wiring substrate using flip chip technology, wherein said at least one interconnection is a solder or metal bump as taught by Funada, because the solder or metal bump provides excellent connection, with increased wettability.

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funada as applied to claim 22-24 and 29-31 above, and further in view of Iwashita et al, US Patent 6,720,846.

Funada is applied supra but lacks the anticipation of wherein said carrier substrate includes an integrated circuit including a radio frequency integrated circuit. Iwashita discloses that the signal output from transmission filter 83 is converted to an RF signal by a converting circuit not shown in the figures. See figure 7 and discussion on column 10, lines 33 to 55. In View of this disclosure it would have been obvious to one of ordinary skill in the art at the time of invention to form said device wherein said carrier substrate includes an integrated circuit including a radio frequency integrated circuit as taught by Iwashita, because the integrated circuit provides information in the form of an RF signal which can easily be displayed.

Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claim 22-24 and 29 above, and further in view of Iwashita et al, US Patent 6,720,846.

Wright is applied supra but lacks the anticipation of wherein said carrier substrate includes an integrated circuit including a radio frequency integrated circuit. Iwashita discloses that the signal output from transmission filter 83 is converted to an RF signal by a converting circuit not shown in the figures. See figure 7 and discussion on column 10, lines 33 to 55. In View of this disclosure it would have been obvious to one of ordinary skill in the art at the time of invention to form said device wherein said carrier substrate includes an integrated circuit including a radio frequency integrated circuit as taught by Iwashita, because the integrated circuit provides information in the form of an RF signal which can readily be displayed.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funada as applied to claim 22-24 and 29-31 above, and further in view of Yamada et al, US Patent 5,932,950.

Funada is applied supra but lacks the anticipation of wherein said device further comprises passive components provided on said capping a substrate. Yamada teaches electrode patterns 173, 174, and 176, 177 are formed as acoustic reflectors of the SAW resonators comprising the SAW multiple mode filter. When each electrode is seen as a transmission line, 173, 176 function as meander line inductors and 174, 177 as inter-digital capacitors. Please see figure 17 and column 22, lines 60 to 65. In view of this disclosure it would have been obvious to one of ordinary skill in the art at the time of invention to provide passive components as taught by Yamada, because the passive components can store charge or induce current.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claim 22-24 and 29 above, and further in view of Yamada et al, US Patent 5,932,950.

Wright is applied supra but lacks the anticipation of wherein said device further comprises passive components provided on said capping a substrate. Yamada teaches electrode patterns 173, 174, and 176, 177 are formed as acoustic reflectors of the SAW resonators comprising the SAW multiple mode filter. When each electrode is seen as a transmission line, 173, 176 function as meander line inductors and 174, 177 as inter-digital capacitors. Please see figure 17 and column 22, lines 60 to 65. In view of this disclosure it would have been obvious to one of ordinary skill in the art at the time of

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invention to provide passive components as taught by Yamada, because the passive components can store charge or induce current.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Lebentritt whose telephone number is 571-272-1873. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael S. Lebentritt
Primary Examiner
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